

Claims

WHAT IS CLAIMED IS:

1. - 10. (canceled)

~~In connection with 5 sheets of drawings~~

11. (new) A method for manufacturing internally and/or externally profiled rings from tubular or solid starting material, the method comprising the steps of:

combining machine-cutting processes and forming processes with one another sequentially, parallel, or sequentially and parallel, wherein one of the forming processes is roll forming;

generating during roll forming a counterforce relative to a flow direction of the starting material so that a material flow in at least one of an axial direction and a radial direction of the starting material is controlled such that flowing material is integrated into a profile to be shaped on the ring.

12. (new) The method according to claim 11, wherein the profiled rings are rolling bearing rings and transmission rings in completely grinding-ready state.

13. (new) The method according to claim 11, wherein the counterforce is generated by a counterpressure tool that counteracts an unhindered material flow in the axial direction by a defined force being applied such that the material flow is directed optionally in the at least one of the axial direction and the radial direction.

14. (new) The method according to claim 11, further comprising the step of promoting axial movability of an outer profile rolling tool during roll forming by at least one of hydraulic means and mechanical means for controlling the material flow in the axial direction.

15. (new) The method according to claim 11, further comprising the step of limiting axial movability of an outer profile rolling tool during roll forming by at least one of hydraulic means and mechanical means for controlling the material flow in the axial direction.

16. (new) The method according to claim 11, for realizing a two-ring or multi-ring machining of an outer contour matching an outer contour of two or several rings, comprising the step of:

simultaneously rolling two or several rings together with a pre-ring on a pipe,

wherein first a ring profile remaining on the starting material is rolled by at least one of (radial) axial pipe roll forming and roll grooving and, subsequently, additional ring profiles are rolled so that several rolled ring profiles are generated on the pipe, wherein the last ring profile remote from a pipe end remains without further machining on the pipe and the ring profiles close to the pipe end are finished by machine-cutting and subsequently separated from the pipe, wherein the last ring profile is a pre-ring during a subsequently repeated processing course.

17. (new) The method according to claim 11, wherein at least one of an inner profiling and an outer profiling of the rings is performed with a single clamping action.

18. (new) An arrangement for manufacturing internally and/or externally profiled rings from tubular or solid starting material, the arrangement comprising:

at least one rolling device with an outer profile rolling tool and an inner profile rolling tool;

wherein the inner profile rolling tool has an axially movable counterpressure tool limiting a material flow and forming a contact surface for the starting material, wherein the counterpressure tool projects past an outer diameter of the inner profile rolling tool so that the material flow is controllable in at least one of an axial direction and a radial direction of the pipe.

19. (new) The arrangement according to claim 18, wherein the rings are rolling bearing rings and transmission rings in a completely grinding-ready state.

20. (new) The arrangement according to claim 18, further comprising a lathe.

21. (new) The arrangement according to claim 18, comprising a multi-spindle automatic lathe, wherein the rolling device with the outer profile rolling tool and the inner profile rolling tool is arranged at one spindle position of the automatic lathe.

22. (new) The arrangement according to claim 18, wherein the rolling device has correlated therewith one or several processing devices for machine-cutting or lathes, wherein the processing devices for machine-cutting or lathes separate the ring from the pipe, immediately after profiling by forming by radial-axial pipe roll forming, by forming and/or by machine-cutting, and wherein finishing by machine-cutting of the ring is not realized until the ring is already separated from the pipe, wherein the separated and pre-profiled ring is transferred to downstream processing devices for machine-cutting or lathes

without intermediate storage.

23. (new) The arrangement according to claim 18, wherein the inner and outer profile rolling tools are axially movable by correlated hydraulic pistons and hydraulic cylinders, respectively.

24. (new) The arrangement according to claim 18, wherein the inner profile rolling tool with the counterpressure tool is connected by a pressure-loadable piston cylinder arrangement to a compound slide.